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ABSTRACT

A study examined the amount and types of cooperation that are occurring between vocational agriculture teachers and county extension agents in North Carolina. The research sample consisted of 194 (49.74 percent) of the state's vocational agriculture teachers and 80 (80 percent) of the state's county extension chairpersons. Sixty-eight percent of the vocational agriculture teachers and 97.5 percent of the extension chairpersons responded to the survey. The respondents were asked to complete a mail questionnaire dealing with the various factors that influence cooperation and the appropriateness and occurrence of various cooperation activities. There was no single factor that the majority of respondents felt hindered cooperation. Colleagues' personalities and attitudes and similarity of program objectives were two factors that were felt to enhance cooperation among vocational agriculture teachers and extension agents. Though both the vocational agriculture teachers and extension agents agreed that most of the 19 activities listed on the questionnaire were valuable in enhancing cooperation, few of the vocational agriculture teachers indicated that they actually carry out the activities. Therefore, it was recommended that: (1) those individuals who are responsible for training vocational agriculture teachers and extension agents should be made aware of the ways in which each of the two groups can serve the other; and (2) further research should be conducted to determine the reasons for the discrepancy between the perceived appropriateness and actual occurrence of cooperative activities in vocational agriculture and extension programs. Tables are included. (MN)

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THE COOPERATIVE RELATIONSHIP BETWEEN
VOCATIONAL AGRICULTURE TEACHERS AND
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INTRODUCTION

Agricultural education can be defined as the process of providing knowledge, skills, and competencies that are necessary for the production and/or processing of plants and animals or their products useful to people. This process is carried out in different forms and by a variety of people and organizations.

Two groups that have been established for the purpose of agricultural education are the Cooperative Extension Service and the public school vocational agriculture program. Both of these agencies are involved in providing knowledge, skills, and competencies that relate to agriculture. Each uses similar methods for providing knowledge and each serves a similar variety of people. Since the purpose and clientele of each agency are similar, it is therefore likely that cooperation would and should occur. However, cooperation does not happen just because the extension agent and vocational agriculture teacher are providing similar services to similar clientele. This fact is known and stated by Anderson (1979), an extension specialist:

Even though we are closely related by education, experience and job responsibilities, vo-ag instructors and extension personnel like to stake out their own territories. We see them as mutually exclusive, competitive operations (p.55).

If this problem is to be overcome, and if cooperation is to occur between the two groups, the following questions need to be answered: (a) What factors hinder or enhance cooperation between vocational agriculture teachers and cooperative extension agents? (b) What activities are appropriate for cooperation? Only after these questions have been answered can the cooperative relationship flourish.

A review of the literature revealed a continuous need for dialogue between vocational agriculture teachers and county extension agents. The literature also revealed a need to analyze and understand the goals and objectives of the two agencies as well as the areas of overlapping responsibility and the areas where cooperation occurs. Though studies have been done in several states, the literature review revealed no study conducted in North Carolina which analyzed the cooperative relationship between teachers of vocational agriculture and county extension agents. Studies conducted in other states revealed disagreement as to the factors that hinder cooperation. For example, in a 1979 study conducted in New York by Wood, it was determined that age had no

significant effect on the cooperative relationship between vocational agriculture teachers and extension agents. A similar study conducted in 1983 by Diatta concluded that age was a factor having a slightly negative effect on cooperation between teachers of vocational agriculture and county extension agents in North Dakota.

In order to better understand the factors that hinder or enhance cooperation and to determine the areas where cooperation is occurring, further study is needed.

PURPOSE AND OBJECTIVES OF THE STUDY

The primary purpose of this study was to determine the amount and types of cooperation that occur between vocational agriculture teachers and county extension agents in North Carolina. A secondary purpose was to aid vocational agriculture teachers, county extension agents, teacher educators, and administrators in their understanding of the cooperation that is possible and desirable between agency personnel. The following objectives served as guidelines in the acquisition and analysis of the data:

1. To determine the factors that enhance or hinder cooperation between vocational agriculture teachers and county extension agents.
2. To determine the existing level of cooperation between teachers of vocational agriculture and county extension agents in various activities, such as youth programs, adult programs, training programs, and special projects.

PROCEDURE

The population for this study was composed of two groups, 390 vocational agriculture teachers and 100 County Extension Chairmen in North Carolina. The research sample consisted of 194 or 49.74% of the population of vocational agriculture teachers and 80 or 80.00% of the population of County Extension Chairmen. The sample sizes were determined using the formula for calculating the sample size needed when the size of the population is known as discussed in Educational and Psychological Measurement by Krejcie and Morgan (1970). The formula was calculated using a 95% confidence level for the table value of chi-square and .05 as the degree of accuracy expressed as a proportion.

The instrument used in the study was developed by the researchers after consulting survey instruments of similar studies, Diatta, 1983; Buddle, 1981; Wood, 1979. Content validity and reliability were established through field testing of the instrument. The reliability of the final instrument as measured by the Cronbach Alpha Reliability Coefficient was .8454.

The two samples were sent the same questionnaire. The first section of the instrument listed various factors which influence cooperation. The teachers and extension chairmen responded using a five-point scale as to whether the factors had a negative or positive effect on cooperation. In the second section of the instrument, the perceptions of the vocational agricultural teachers and county extension chairmen were obtained as to the appropriateness and occurrence of various cooperative activities. The respondents

were asked to indicate yes or no for the appropriateness and occurrence of the activities.

The data were collected with an initial mailing and one follow-up. Eight (11%) of the non-respondents from the sample of vocational agriculture teachers were randomly selected and were administered the questionnaire over the phone. The data collected via the telephone were analyzed to determine whether there was a non-respondent bias in this sample. It was determined that no bias existed and the data from the telephone contacted respondents were then included in the sample population.

ANALYSIS OF DATA

Descriptive and inferential statistics were used to analyze the data from both sections of the questionnaire. The TTEST subprogram of the Statistical Analysis system (SAS) was used to calculate the mean score of each factor, to determine which factors were said to enhance or hinder cooperation, and to determine whether there was a significant difference in the responses between the vocational agriculture teachers and the county extension chairmen. Since the factors on the questionnaire could not be proven to be independent variables, the alpha level was set at .01 to reduce the effects of experiment-wise error. The second section of the questionnaire was analyzed using the CHISQ subroutine of the FREQ subprogram of SAS.

RESULTS

The survey instrument was sent to 194 vocational agriculture teachers and 80 county extension chairmen. The total response was 132 or 68% of the vocational agriculture teachers and 78 or 97.5% of the extension chairmen.

Factors Affecting Cooperation

Fifteen factors as shown in Table 1 were analyzed to determine the effect they had on the cooperative relationship between vocational agriculture teachers and county extension agents. None of the factors were determined to hinder or greatly hinder the cooperative relationship of the two professional groups. All fifteen factors were rated as either having no effect on cooperation or as enhancing the cooperative relationship. All of the factors except "recognition received from colleague" were rated higher by vocational agriculture teachers than by county extension chairmen. The factor "colleague's attitude toward you" had the highest mean score and was perceived by both groups as having the greatest positive effect on the cooperative relationship.

Though the means for the factors effecting cooperation were consistently higher for vocational agriculture teachers, the difference in the means was rarely significant. The mean for the factor "educational background of colleague" was 3.39 as perceived by extension chairmen and 3.73 as perceived by vocational agriculture teachers. The t-test analysis revealed a significant difference in perceptions at the .01 level.

"Instructional methods" and "colleague's years of experience" were factors perceived by vocational agriculture teachers towards enhancing (x 3.50) the cooperative relationship. County extension chairmen perceived these factors as having less effect (x 3.50) on cooperation between the two agencies.

Table 1

Means, Standard Deviations, and T-Test Values for Factors that Effect Cooperation Between Extension Chairmen and Vocational Agriculture Teachers

Factors Effecting Cooperation	Extension Chairmen (n=78)	Vo-Ag Teachers (n=132)	T-test Analysis	
	M/SD (a)	M/SD (a)	t-value	p-value
Colleague's attitude toward you	<u>3.90</u> 0.96	<u>4.08</u> 0.86	1.15	.251
Colleague's personality	<u>3.81</u> 0.87	<u>4.03</u> 0.82	1.66	.099
Community needs	<u>3.71</u> 0.67	<u>3.83</u> 0.67	1.46	.145
4-H, FFA Contests	<u>3.65</u> 0.64	<u>3.86</u> 0.81	1.86	.064
Colleague's years of experience	<u>3.44</u> 0.75	<u>3.77</u> 0.71	3.20	.002 *
Program objectives	<u>3.53</u> 0.66	<u>3.68</u> 0.71	1.83	.069
Educational background of colleague	<u>3.39</u> 0.69	<u>3.73</u> 0.67	3.92	.000 *
Publicity of colleague's work	<u>3.38</u> 0.52	<u>3.55</u> 0.67	1.44	.152
Influence of advisory committees	<u>3.42</u> 0.59	<u>3.43</u> 0.61	0.24	.810
Population to be served	<u>3.36</u> 0.74	<u>3.47</u> 0.75	1.20	.230
Instructional methods	<u>3.26</u> 0.59	<u>3.52</u> 0.64	3.33	.001 *
Recognition received from colleague	<u>3.44</u> 0.69	<u>3.36</u> 0.81	0.32	.746
Influence of administration	<u>3.16</u> 0.67	<u>3.31</u> 0.69	1.50	.136
Age of colleague	<u>3.10</u> 0.41	<u>3.20</u> 0.49	1.64	.103
Distance between your office and your colleague's office	<u>2.94</u> 0.79	<u>3.11</u> 0.88	1.57	.118

* $p < .01$

a Note: 1 = Greatly Hinders 2 = Hinders 3 = No Effect 4 = Enhances
5 = Greatly Enhances

According to the t-test, the difference in perception of the two groups is significant at the .01 level.

Appropriateness and Occurrence of Cooperative Activities

Nineteen activities that could be appropriate for cooperation were listed in the second section of the instrument and are shown in Table 2. Seventy percent or more of both professional groups perceived all of the activities except one to be appropriate for cooperation. "Conduct fund raisers" was perceived by a majority of the sample to be an activity inappropriate for cooperation between vocational agriculture teachers and county extension agents. "Serve as an information source," "communicate via phone or letter," and "share publications" were the activities perceived by the largest percentage of county extension chairmen and vocational agriculture teachers to be appropriate for cooperation. Seventy-five percent or more of the chairmen rated all the activities except "serve on colleague's advisory committee," "participate in joint in-service training," "conduct fund raisers," and "organize demonstration plots" as appropriate for cooperation. Only 26.0% of the extension chairmen rated "conduct fund raisers" as an appropriate activity for cooperation.

For all of the activities but two, "serve as an information source" and "invited to awards banquet," the percentage of vocational agriculture teachers who perceived the activities as appropriate was greater than the percentage of extension agents who perceived the activities as appropriate. There were significant differences in the perceptions of vocational agriculture teachers and county extension chairmen as to the appropriateness of the activities "participate in joint in-service training," "share publications," "share teaching materials," "conduct fund raisers," "organize demonstration plots," and "conduct adult classes."

According to the findings in Table 2, all of the activities except one were perceived to be appropriate for cooperation by a majority of the sample. The number of cooperative activities perceived as occurring by a majority of the county extension chairmen and vocational agriculture teachers is much smaller. A majority of the county extension chairmen perceived cooperation occurring in only 10 of the 19 activities. "Share publications," "serve as an information source," and "communicate via phone or letter" were the activities rated by the largest percentage of extension agents to be occurring cooperatively. The same activities were perceived by over 80% of the vocational agriculture teachers as occurring.

"Conducting fund raisers" received the lowest rating as an activity occurring cooperatively. Similarly, "serving on a colleague's advisory committee" was perceived by approximately one-fourth of the county extension chairmen and vocational agriculture teachers. The two groups differed significantly in their perceptions of the occurrence of the following cooperative activities: "participate in joint in-service training" and "share teaching materials." For both of these activities, the difference was significant at the .01 level.

Table 2

Ratings of Extension Chairmen and Vocational Agriculture Teachers for Appropriateness and Occurrence of Cooperative Activities and Differences in Perceptions as Measured by Chi-Square

Activity	Extension Chairmen				Voc. Agric. Teachers				Appr. ^b Chi-Square	Occur. ^b Chi-Square
	Appropriate		Occurrence		Appropriate		Occurrence			
	Yes	(a) No	Yes	No	Yes	No	Yes	No		
	$\frac{n}{\%}$ ^a		$\frac{n}{\%}$		$\frac{n}{\%}$		$\frac{n}{\%}$			
Serve on colleague's advisory committee	$\frac{54}{70.1}$	$\frac{23}{29.9}$	$\frac{20}{27.0}$	$\frac{54}{73.0}$	$\frac{101}{79.5}$	$\frac{26}{20.5}$	$\frac{31}{24.8}$	$\frac{94}{75.2}$	2.53	2.00
Serve as an information source	$\frac{77}{98.7}$	$\frac{1}{1.3}$	$\frac{68}{88.3}$	$\frac{9}{11.7}$	$\frac{125}{96.9}$	$\frac{4}{3.1}$	$\frac{108}{85.7}$	$\frac{18}{14.3}$	.62	.72
Share community survey material	$\frac{70}{89.7}$	$\frac{8}{10.3}$	$\frac{41}{53.9}$	$\frac{35}{46.1}$	$\frac{121}{93.8}$	$\frac{8}{6.2}$	$\frac{85}{68.5}$	$\frac{39}{31.5}$	2.01	2.91
Participate in joint in-service training	$\frac{54}{69.2}$	$\frac{24}{30.8}$	$\frac{17}{22.1}$	$\frac{60}{77.9}$	$\frac{109}{84.5}$	$\frac{20}{15.5}$	$\frac{68}{53.5}$	$\frac{59}{46.5}$	7.65**	17.62**
Communicate via phone or letter	$\frac{76}{97.4}$	$\frac{2}{2.6}$	$\frac{70}{92.1}$	$\frac{6}{7.9}$	$\frac{128}{99.2}$	$\frac{1}{.8}$	$\frac{125}{98.4}$	$\frac{2}{1.6}$	1.18	2.44
Share newsletters	$\frac{64}{83.1}$	$\frac{13}{16.9}$	$\frac{41}{53.2}$	$\frac{36}{46.8}$	$\frac{110}{85.3}$	$\frac{19}{14.7}$	$\frac{85}{66.9}$	$\frac{42}{33.1}$	.29	3.57
Share publications	$\frac{69}{89.6}$	$\frac{8}{10.4}$	$\frac{61}{81.3}$	$\frac{14}{18.7}$	$\frac{125}{96.9}$	$\frac{4}{3.1}$	$\frac{106}{84.1}$	$\frac{20}{15.9}$	5.04*	.07
Share teaching materials	$\frac{61}{79.2}$	$\frac{16}{20.8}$	$\frac{36}{47.4}$	$\frac{40}{52.6}$	$\frac{122}{94.6}$	$\frac{7}{5.4}$	$\frac{98}{77.8}$	$\frac{28}{22.2}$	12.29**	18.96**
Invited to awards banquet	$\frac{67}{85.9}$	$\frac{11}{14.1}$	$\frac{43}{56.6}$	$\frac{33}{43.4}$	$\frac{109}{85.2}$	$\frac{19}{14.8}$	$\frac{64}{51.6}$	$\frac{60}{48.4}$	.19	1.00
Serve as a guest speaker	$\frac{67}{85.9}$	$\frac{11}{14.1}$	$\frac{44}{57.1}$	$\frac{33}{42.9}$	$\frac{111}{86.7}$	$\frac{17}{13.3}$	$\frac{58}{46.4}$	$\frac{67}{53.6}$	.02	3.19

Table 2 (continued)

Activity	Extension Chairmen				Voc. Agric. Teachers				Appr. ^b Chi-Square	Occur. ^b Chi-Square
	Appropriate		Occurrence		Appropriate		Occurrence			
	Yes	No	Yes	No	Yes	No	Yes	No		
	$\frac{n}{\%}$ ^a		$\frac{n}{\%}$		$\frac{n}{\%}$		$\frac{n}{\%}$			
Joint participation at county fairs	$\frac{63}{85.1}$	$\frac{11}{14.9}$	$\frac{38}{54.3}$	$\frac{32}{45.7}$	$\frac{114}{89.8}$	$\frac{13}{12.4}$	$\frac{86}{68.8}$	$\frac{39}{31.2}$	1.75	4.34
Train judging teams	$\frac{64}{82.1}$	$\frac{14}{17.9}$	$\frac{42}{54.5}$	$\frac{35}{45.5}$	$\frac{113}{87.6}$	$\frac{16}{12.4}$	$\frac{67}{53.2}$	$\frac{59}{46.8}$	1.50	.05
Conduct community service project	$\frac{62}{79.5}$	$\frac{16}{20.5}$	$\frac{29}{38.2}$	$\frac{47}{61.8}$	$\frac{109}{84.5}$	$\frac{20}{15.5}$	$\frac{57}{45.2}$	$\frac{69}{54.8}$	1.03	1.07
Conduct fund raisers	$\frac{20}{26.0}$	$\frac{57}{74.0}$	$\frac{6}{7.7}$	$\frac{72}{92.3}$	$\frac{55}{43.0}$	$\frac{73}{57.0}$	$\frac{18}{14.3}$	$\frac{108}{85.7}$	6.45 [*]	1.75
Joint participation in livestock shows	$\frac{69}{89.6}$	$\frac{8}{10.4}$	$\frac{49}{64.5}$	$\frac{27}{35.5}$	$\frac{115}{89.8}$	$\frac{13}{10.2}$	$\frac{84}{66.7}$	$\frac{42}{33.3}$	.02	.05
Organize demonstration plots	$\frac{57}{73.1}$	$\frac{21}{26.9}$	$\frac{25}{33.3}$	$\frac{50}{66.7}$	$\frac{114}{88.4}$	$\frac{15}{11.6}$	$\frac{43}{34.1}$	$\frac{83}{65.9}$	9.72 [*]	.05
Conduct adult classes	$\frac{60}{77.9}$	$\frac{17}{22.1}$	$\frac{28}{35.9}$	$\frac{50}{64.1}$	$\frac{112}{87.5}$	$\frac{16}{12.5}$	$\frac{60}{47.6}$	$\frac{66}{52.4}$	3.78	2.86
Conduct short courses/ workshops	$\frac{65}{84.4}$	$\frac{12}{15.6}$	$\frac{30}{39.0}$	$\frac{47}{61.0}$	$\frac{114}{88.4}$	$\frac{15}{11.6}$	$\frac{67}{52.8}$	$\frac{60}{47.2}$	.87	3.75
Conduct field trips	$\frac{68}{87.2}$	$\frac{10}{12.8}$	$\frac{36}{46.8}$	$\frac{41}{53.2}$	$\frac{120}{93.0}$	$\frac{9}{7.0}$	$\frac{77}{60.6}$	$\frac{50}{39.4}$	2.28	3.65

^a % calculated based on the number responding "yes" or "no"; missing values were not included in the reporting of the "n" or "%."

^b Chi-square value for the difference in perceptions of the sample of County Extension Chairmen and the sample of vocational agriculture teachers.

*p < .05

**p < .01

CONCLUSIONS

1. The factors affecting cooperation vary in their impact. There is no one factor considered by a majority of the sample to hinder cooperation.
2. The personality and attitude of one's colleague are considered to enhance cooperation as is the similarity of program objectives.
3. County extension chairmen and vocational agriculture teachers agreed upon a majority of the activities investigated in this study as appropriate for cooperation.
4. Though both professional groups agree as to the activities that are appropriate for cooperation, the actual performance of these activities does not occur among a large portion of the agricultural educators.

RECOMMENDATIONS

The following recommendations are made on the basis of the conclusions of this study.

1. The purpose and objectives of the Agricultural Extension Service and vocational agriculture should be seen as complementary and compatible. Vocational agriculture teachers and county extension chairmen both said "program objectives" was a factor enhancing cooperation. It is therefore recommended that those people preparing to be vocational agriculture teachers or extension agents should be aware of ways they can serve or be served by each other.
2. Because of the disproportioned response between the perceived appropriateness and occurrence of cooperative activities, further investigation is needed to determine factors that prevent the occurrence of cooperative efforts.

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